Method and System for Distinguishing Effects Due To Bifurcation from Effects Due to Design Variabl Changes in Finit Element Analysis

ABSTRACT

A method, a software product and a system for distinguishing effects due to bifurcation from effects due to design variable changes in finite element analysis is disclosed. According to one aspect of the invention, 1) a plurality of design experiments is analyzed with finite element analysis (FEA) software; 2) a metamodel is constructed from the FEA responses using the least squares fitting technique; 3) any FEA response that is not predicted by the metamodel is classified as outlier, which is the high likelihood candidate for bifurcation; and 4) verification of the bifurcation is then to be confirmed. The method is implemented in a design and probabilistic analysis software product.